**Kim and Cox Reply:** We thank the authors of the preceding comment [1] for their significant clarification of the experimental themopower situation on $\mathrm{La}_{1-x}\mathrm{Ce}_x\mathrm{Cu}_{2.2}\mathrm{Si}_2$ [2], particularly at the value $x = 0.1$ where non-Fermi-liquid (NFL) signatures are apparent in thermodynamic measurements [3]. We agree that their data contradict the results of the simple model presented in our recent Letter [4], and are arguably more suggestive of the one-channel (rather than two-channel) Kondo model. We also agree that their preliminary results on the apparent crossovers in temperature dependence for the specific heat and resistivity suggest the relevance of collective effects, as might be expected from proximity to a zero temperature quantum spin glass transition [5].

In response, however, we wish to make two points which may yet favor a two-channel Kondo scenario for the NFL physics of this alloy:

*(1) Approximate single site scaling.*—It is apparent from the thermodynamic data [3] that over a limited range (about 3 to 10 K) the $\ln T$ behavior in the specific heat coefficient per Ce ion agrees in magnitude for $x = 0.025$, 0.1, 0.15, and the magnetic susceptibility for $x = 0.025$, 0.1 overlaps beautifully. Given the well known materials problems for this system, particularly for $x = 1$ where NFL physics and superconductivity arise only in a very narrow range of stoichiometry [6], we believe it is still prudent to investigate whether the single ion physics dictates the NFL behavior at least at higher temperatures. We anticipate that the two-channel fixed point cannot remain stable to intersite coupling effects [7], so at best will dominate the properties in a crossover regime in any case.

*(2) Effects on reduced crystal field splitting.*—The simple model of Ref. [4] neglected the higher energy crystal field state on the Ce ion. For $x = 1$, this is known to be a quartet at approximately 350 K, which will produce a scattering resonance above $E_F$ and hence a positive thermopower at sufficiently high temperatures. On the other hand, La expands the lattice, which reduces the hybridization $V$, and this should reduce the crystal field splitting $\Delta$ which is likely to be dominated by hybridization induced crystal field splitting [8] (though the lattice expansion also reduces point charge or Madelung energy induced splitting). [Note that the ground doublet Kondo scale $T_K$ which determines the width of the near Fermi level scattering resonance has an exponential factor $\sim\exp(-A/V^2)$ which clearly gets smaller as $V$ is reduced, but also a factor $\sim(E_F/\Delta)^2$ which tends to enhance it, so the near Fermi level scattering may not change much.] In principle, this reduction of the excited state scattering can shift the low temperature thermopower to be positive. Indeed, the position at about 110–120 K of the thermopower peak in Fig. 1 of the preceding comment requires a much smaller crystal field splitting ($\leq$200 K) to explain the data. To at least prove this possibility, consider a simple model in which we place a central Lorentzian scattering resonance at $\epsilon_g$ with width $\Gamma_g$, and a crystal field Lorentzian scattering resonance at energy $\epsilon_x = \epsilon_g + \Delta$ with width $\Gamma_x$ and total strength twice that of the ground resonance (since it is a quartet of states). We take $\epsilon_g \ll \Gamma_g \simeq T_K$. Then it is straightforward to show that the low temperature thermopower slope will be positive provided $\epsilon_g < 0$, $\epsilon_x > 0$ (consistent with the assumption of greater $f^2$ weight than $f^0$ weight in the ground state), and we satisfy

$$|\epsilon_g| < \frac{2\Gamma_g^2\Gamma_x^2}{(\Gamma_x^2 + \epsilon_x^2)^2}\,\epsilon_x\,. \qquad (1)$$

It is easy to satisfy this criterion for choices of $\epsilon_x$ less than 100 K, and $\Gamma_g \simeq 10$ K, $\Gamma_x \simeq 100$ K but not for $\epsilon_x = 350$ K as expected for $x = 1$. Thus, in principle the absence of the sign change at low $T$ in the $x = 0.1$ samples may find explanation in the reduced crystal field splitting, though extensive and detailed calculations on a more realistic model than that of Ref. [4] or above are required to answer this definitively. In particular, this simple resonance model ignores the singular many body effects of the two-channel Kondo effect and cannot produce an extra positive thermopower peak at low temperatures.

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D. L. Cox
Department of Physics
The Ohio State University
Columbus, Ohio 43210

T. S. Kim
Department of Physics
University of Florida
Gainesville, Florida 32611-8440

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